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1 *Parker's 767*  
Of the Principles of Bodies.

The Object & chief End of Chymistry, is to separate the different Substances that enter into the composition of bodies; to examine each of them apart; to discover their properties & relations; to decompose those very substances, if possible; to compare them together, and combine them w<sup>th</sup> others; to reunite them again into one body so as to reproduce the original compound with all its properties; or even to produce new compounds that never existed among the works of Nature, from mixtures of other matters differently combin<sup>d</sup>.

Chemistry

To these substances we may, in my  
opinion, give the title of Princi-  
ples of Elements: at least they  
are really such with regard to us.  
Of this kind the principal are  
Earth, Water, Air & Fire.

### §. 1. Of Air

Air is that Fluid which we  
constantly breathe, & which encom-  
passes the whole surface of the  
terrestrial Globe. Being heavy,  
like all other Bodies, it penetrates  
into all places that are not ei-  
ther absolutely inaccessible, or  
filled with some other body  
heavier than itself. Its princi-  
pal property is to be susceptible  
of condensation and rarefaction;  
so that the very same quantity  
of Air may occupy a much -

greater, or much smaller space, according to the different state it is in. Heat & Cold, or, if you will, the presence and absence of the particles of Fire, are the most usual causes, & indeed the Measures, of its condensation & rarefaction: for if a certain quantity of Air be heated, its bulk enlarges in proportion to the degree of heat applied to it; the consequence whereof is that the same space now contains fewer particles of Air than it did before. Cold again produces just the contrary effects.

## §. 2. Of Water.

Water is a thing so well known, that it is almost needless to attempt giving a general idea of it here. Every one knows that



it is a transparent insipid substance, & usually fluid. I say it is usually so; for being exposed to a certain degree of cold it becomes solid: solidity therefore seems to be its most natural state.

Water being exposed to Fire grows hot; but only to a limited degree, beyond <sup>which</sup> its heat never rises, be the force of fire applied to it ever so violent: it is known to have acquired this degree of heat by it boiling up with great tumult. Water cannot be made hotter, because it is volatile, and incapable of enduring the heat without being evaporated and entirely dissipated.

### §. 3. Of Earth

We observed the two principles above treated of to be Volatile: that is, the action of Fire separates

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them from the bodies they help to  
compose carrying them quite off,  
& dissipating them. That of which  
we are now to speak, namely  
Earth, is fixed, and, when it is also  
lately pure, resists the utmost force  
of Fire. So that, whatever remains  
of a body, after it hath been ex-  
posed to the power of the fiercest  
Fire, must be considered as con-  
taining nearly all its earthy prin-  
ciple, & consisting chiefly thereof.  
I qualify my expression thus for  
two reasons: the first is, because  
it often happens, that this re-  
mainder does not actually con-  
tain all the Earth which ex-  
isted originally in the mist body  
decomposed by Fire; since it will  
afterwards appear that Earth, -  
tho' in its own nature fixed, may



be rendered volatile by being intimately united with other substances that are so; & that, in fact, it is common enough for part of the Earth of a body to be thus volatilized by its other principles: the second is, that what remains after the calcination of a body is not generally its earth in perfect purity, but combined with some of its other principles, which, tho' volatile in their own natures, have been fixed by the union contracted between it and them.

#### § 4. Of Fire.

The Matter of the Sun, or of Light, the Phlogiston, Fire, the Sulphureous principle, the Inflammable Matter, are all of them names by which the Element of Fire is usually denoted. But it should seem, that an accurate distinction hath not yet been



made between the different states in which it exists; that is, between the phenomena of Fire actually existing as a principal in the composition of bodies, and those which it exhibits when existing separately & in its natural state: nor have proper distinct appellations been assigned to it in those different circumstances. In the latter state we may properly give it the names of Fire, Matter of the sun, of Light, & of Heat; and may consider it as a substance composed of infinitely small particles, continually agitated by a most rapid motion, and of consequence, essentially fluid.

A property of Fire is to dilate all bodies into which it penetrates. This hath already been shewn with regard to Air & Water;

and it produces the same ef-  
fects on Earth.

Fire is the most powerfull a-  
gent we can employ to decom-  
pose bodies; and the greatest de-  
gree of heat producible by Man,  
is that excited by the rays of the  
Sun collected in the focus of a  
large burning glass.

Vol. I. page 11.

A general View of the  
Relations or Affinities be-  
tween Bodies.

Before we can reduce compr.  
Bodies to the first principles a-  
bove mention'd, we obtain, by ana-  
lysing them, certain substances  
which are indeed more simple  
than the Bodies the help to



compose, yet are themselves composed of our primary principles. They are therefore at one & the same time both principles & compounds; for which reason we shall call them by the name of Secondary Principles. Saline & oily matters chiefly constitute this class. But before we enter upon an examination of their properties, we shall give a general view of what Chymists understand by the Relations or Affinities of Bodies; because it is necessary to know these in order to a distinct conception of the different combinations we are to treat of.

Let that hath been said concur with daily observation to prove

that different bodies, whether prin:  
ciples or compounds, have such a  
mutual conformity, Relation, Affi:  
nity, or Attraction, if you will call  
it so, as disposes some of them to join  
& unite together, while they are inca:  
pable of contracting any union with  
others. This effect, whatever be its  
cause, will enable us to account for,  
and connect together, all the phe:  
nomena that Chymistry produces.

The nature of this universal af:  
fection of matter is distinctly laid  
down in the following propositions.

1.<sup>st</sup> If one substance has an afini:  
ty or conformity with another, the  
two will unite together & form one com:  
pound.

2.<sup>nd</sup> It may be laid down as a ge:  
ge:



general rule, that all similar Substances have an affinity w<sup>th</sup> each other, & are consequently disposed to unite; as water with water, earth with earth, &c.

3. Substances that unite together, lose some of their separate properties & the compounds resulting from their union partake of the properties of those substances which serve as their principles.

4. The simpler any substances are, the more perceptible & considerable are their Affinities: whence it follows, that the less bodies are compounded, the more difficult it is to analyse them; that is, to separate from each other the principles of which they consist.

<sup>thly</sup> 5. If a body consist of two substances and to this compound be presented a third substance that has no affinity at all with one of the two primary substances aforesaid, but has a greater affinity with the other than those two substances have with each other, there will ensue a decomposition, and a new union; that is, the third substance will separate the two compounding substances from each other, coalesce with that which has an affinity with it, form therewith a new combination, and disengage the other, which will then be left at liberty, and such as it was before it had contracted any union.



## Explanation of Geoffroy's Table of Affinities.

The late M.<sup>r</sup> Geoffroy, one of the best  
Chemists we have had, being con-  
vinced of the advantages which all  
who cultivate Chemistry would re-  
ceive from having constantly &  
before their eyes a state of the best  
ascertained relations between the  
chief agents in Chemistry, was of  
first who undertook to reduce  
them in order, and write them  
all in one point of view, by means  
of a Table.

You have it here just as it was  
drawn up by M.<sup>r</sup> Geoffroy, without  
any addition or alteration.

The upper line of this Table com:  
prehends several substances used  
in Chymistry. Under each of those  
Substances are ranged in distinct  
columns several matters compar'd  
with them, in the order of their re:  
lation to that first substance; so as  
that which is the nearest to it, is  
that which hath the greatest  
<sup>affinity</sup> with it, or that which none of  
the substances standing below it, can  
separate therefrom; but which, on  
the contrary, separates them all  
when they are combin'd with it,  
& expels them ~~all~~ ~~where~~ in order  
to join itself therewith. The same  
is to be understood of that which  
occupies the second place of af:  
finity; that is, it has the same



property with regard to all below it, yielding only to that which is above it: & so of all the rest.

At the top of the first column stands the character which denotes an Acid in general. Immediately under this stands the mark of a fixed Alkali, being placed there as <sup>the</sup> substance which has the greatest affinity with an Acid. After the Fixed Alkali appears the Volatile Alkali, whose affinity with Acids, yields only to the Fixed Alkali. Next comes the Absorbent Earth, & last of all Metallic Substances. Hence it follows that when a fixed Alkali is united with an Acid, it cannot be separated therefrom by any other substance; that a

Volatile Alkali united with an Acid cannot be separated from it by any thing but a fixed Alkali; that an Absorbent Earth combin'd with an Acid, may be separated from it either by a Fixed or by a Volatile Alkali; and lastly, that any Metallic Substance combin'd with an Acid, may be separated from it by a Fixed Alkali, a Volatile Alkali, or an Absorbent Earth.

At the head of the second column stands the character of the Marine Acid, which signifies that the affinities of this Acid are the subject of the column. Immediately below it is placed the mark of Tin. Tin, then, is of all metallic substances that which has the



the greatest affinity with the Marine Acid; & then follow Regulus of Antimony, Copper, Silver, Mercury. & Gold last of all; & there are no less than two vacant places above it. By this means it is in some sort excluded from the rank of substances that have an affinity with the Marine Acid. The reason thereof is that this Acid alone is not capable of dissolving Gold & combining there with.

The third column exhibits the affinities of the Nitrous Acid, the character whereof stands at its head. Immediately below it is the sign of Iron, as the metal which has the greatest affinity with this Acid; & then follow other metals, each

according to the degree of its relation; to wit, Copper, Lead, Mercury, & Silver. ~

The fourth column is intended, to represent the affinities of the Vitriolic Acid. ~

The fifth column shews the affinities of Absorbent Earths. As these Earths have no sensible affinity but with Acids, this column contains only the characters of the Acids ranked according to the degree of their strength, or affinity with the Earth; to wit, the Vitriolic, the Nitrous, & the Marine Acids. Underneath this last might be placed the Acid of Vinegar, or the Vegetable Acid. ~



The sixth column expresses the affinities of Fixed Alkalies with Acids, which are the same with those of Absorbent Earth. Moreover we find Sulphur placed here below all the Acids; because Liver of Sulphur, which is a combination of Sulphur with a fixed Alkali, is actually decomposed by any Acid: for any Acid precipitates the Sulphur & unite with the Alkali.

The seventh column points out the affinities of Volatile Alkalies, which are likewise the same as those of Absorbent Earth; and the Vegetable Acid might be placed here also under the Marine Acid.

The eighth column specifies the affinities of Metallic substances with Acids. The affinities of the Acids, which w<sup>th</sup> respect to Fixed Alkalies, Volatile Alkalies, & Absorbent Earths, succeeded each other uniformly, do not appear in the same order here.

The Marine Acid, instead of being placed below the Vitriolic and Nitrous Acids, stands, on the contrary, at their head; because, in fact, this Acid separates Metallic substances from all the other Acids with which they happen to be united & forcing these Acids to quit possession intrudes into their place. Nevertheless, this is not a general rule, if several Metallic substances must be excepted, Iron & Copper in particular.



The ninth column declares the affinities of Sulphur, Fixed Alkali, Iron, Copper, Lead, Silver, Regulus of Antimony, Mercury, and Gold, stands below it in the order of their affinities. With regard to Gold it must be observed, that it will not unite with pure Sulphur; it suffers itself to be dissolved only by Liver of Sulphur, which is known to be a composition of Sulphur and Fixed Alkali. —

At the head of the tenth column appears Mercury, and beneath it several Metalline substances, in the order of their affinities with it. Those Metalline substances are Gold, Silver, Lead, Copper, Zinc, & Regulus of Antimony.

The eleventh column shews that Lead has a greater affinity with Silver than with Copper. ~

The twelfth, that Copper has a greater affinity with Mercury than with Calamine. ~

The thirteenth, that Silver has a greater affinity with Lead than with Copper. ~

The fourteenth contains the affinities Iron. Regulus of Antimony stands immediately underneath it, as being the Metallic substance which has the greatest affinity with it. ~

The same is to be said of the fifteenth column: Regulus of Antimony stands at its head; Iron is immediately below it. ~



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Lastly, the sixteenth column, <sup>indicating</sup> that  
Water has a greater affinity with Sp.<sup>t</sup>  
of Wine than with Salt. By this ge-  
neral expression must not be un-  
derstood any saline substance what-  
ever; but only the Neutral Salts,  
which Sp.<sup>t</sup> of Wine frees from the Wa-  
ter that kept them in solution.  
To these might be added another  
short column, having Sp.<sup>t</sup> of Wine  
at its head; immediately below should  
be the character of Water, & below  
that the mark of Oil. This column  
would shew that Sp.<sup>t</sup> of Wine has a great-  
er affinity w<sup>th</sup> Water than with  
Oils; because an oily matter what-  
ever, if dissolved in Sp.<sup>t</sup> of Wine, may  
be actually separated from it by  
the affusion of Water.

# Geoffroy's Table of the observed between

I.	II.	III.	IV.	V.	VI.	VII.	VIII.
							MS
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MS							

## Explanation of

Acid

Marine Acid

Nitrous Acid

Vitriolic Acid

Fixed Alkali

Volatile Alkali

Absorbent Earth

MS. Metallic Substances

Mercury

Regulus of Antimony

Gold or Sol.

Silver or Luna





Doctor Morgan's Table  
of Affinities differs  
from Geoffroy's consi-  
derably



# Of Metals.

There are six Metals, of which two are perfect & four Imperfect. The perfect Metals are Gold & Silver; the others are Copper, Tin, Lead, and Iron. Some Chymists admit a seventh Metal, to wit, Quick Silver: but as it is not malleable, it has been generally considered as a metallic body of a particular kind.

The ancient Chymists, or rather the Alchymists, who fancied a certain relation or analogy between Metals & the Heavenly Bodies, bestowed on the seven Metals, reckoning Quick Silver one of them, the names of the seven Planets of the Ancients, according to the affinity which they imagined the observed between those several bodies.

Thus

Thus Gold was called Sol, Silver, &  
Luna, Copper Venus, Tin Jupiter, &  
Lead Saturn, Iron Mars, & Quick-  
Silver Mercury. —

Metals are the heaviest bodies known in  
Nature.

### §. 1. Of Gold.

Gold is the heaviest of all Metals.  
The arts of wire drawing and gold-  
beating shew its wonderful ductili-  
ty. The greatest violence of fire is not  
able to produce any alteration in  
it. Tho' it be the most mallea-  
ble & most ductile of all metals, it has  
the singular property of losing its  
ductility more easily than any of  
them: even the fumes of charcoal are  
sufficient to deprive it thereof, if  
they come in contact with it while it  
is in fusion.



The malleability of this metal, & indeed of all the rest, is also considerably diminished by exposing it suddenly to cold when it is red hot; for example, by quenching it in water, or even barely exposing it to the cold air.

### Of its <sup>var</sup> Ores

Gold being constantly found in its metalline form, & never combin'd w<sup>th</sup> sulphur & arsenic, its ores are not, & properly speaking, ores; because the metal contained in them is not mineralized. The gold thus found is only lodged between particles of stone, earth or sand, from which it is easily separated by lotion, and by amalgamation with quicksilver. Gold thus found is alloyed w<sup>th</sup> silver.

## S. 2. Of Silver

Next to Gold, Silver is the most perfect metal. Like Gold it resists the utmost violence of fire, even in the focus of a burning-glass. However it holds only the second place among metals; because it is lighter than Gold by almost half; is also somewhat less ductile; & lastly, because it is acted upon by a greater number of solvents.

Yet Silver hath one advantage over Gold, namely that of being a little harder; which makes it also more sonorous.

This metal, like Gold, begins to flow when it is so thoroughly penetrated ~~permeated~~ by the fire as <sup>to</sup> appear ignited like a live coal.



The nitrous acid is the true solvent of Silver, & being somewhat dephlegmated will very easily & readily take up a quantity of Silver equal in weight to itself.

Silver unites w. <sup>the</sup> Sulphur infusion.

Silver unites & mixes perfectly with Gold in fusion. The two metals thus mixed form a compound with properties partaking of both.

When Silver is dissolved in aqua fortis it may be separated therefrom, by absorbent Earths & fixed alkalis. —

### Of its Ores.

It is no rare thing to find silver, as well as gold, in its metalline form, only lodged in sundry earths & stony matters, from which it

may be separated in the same manner as gold. But the greatest quantities of this metal are usually dug out of the bowels of the earth in a truly mineral state, that is, combin'd with different substances, & particularly with Sulphur and arsenic.

### §. 3. Of Copper.

Of all the imperfect metals Copper comes the nearest to Gold & Silver.

Its natural colour is a deep red yellow. It resists a very violent degree of fire for a considerable time; but losing its phlogiston at last, it changes its metalline form for that of a calx, or a pure reddish earth.

This metal is inferior to Silver in



point of gravity: nor is its ductility so great, tho' it be pretty considerable: but on the other hand, it exceeds that metal in hardness. The rust of Copper is always green or blue, or of a colour between these two. Internally used it is very noxious, being real poison, as are all the solutions of this metal, made by any acid whatever. The blue colour, which Copper constantly assumes when corroded by any saline substance, is a sure sign by which it may be discovered & wherever it exists, even in a very small quantity.

Of all the metals, next to Gold & Silver, Copper bears fusion the longest without losing its phlogiston.

### Of its Ore

Copper is much seldomer found in a metalline form, than gold or silver: it is commonly in a mineral state: it is mineralized by sulphur & arsenic: almost all its ores contain also more or less iron; sometimes a little silver or even gold, together w<sup>th</sup> unmetallic earths & stones, as all ores do. Most copper ores are of a brassy green or blue or else in shades blended of these two colours.

### S. A. Of Iron

Iron is lighter & less ductile than Copper; but it is much harder, and of more difficult fusion.

It is the only body that has the property of being attracted by the magnet, which therefore

serves to discover it wherever it is.  
But it must be observed that it  
hath. this property only when in its  
metalline state, & loses it when con-  
verted to an earth or calx.

Bar Iron is still harder to fuse than  
Wig Iron: to make it flow requires  
the <sup>ut:</sup> most force of fire. ~

Iron exposed to the fire, together  
with nitre makes it detonate  
pretty briskly, sets it in a flame,  
& decomposes it with rapidity.

### Of its Ores. ~

Iron is seldom found pure &  
malleable in the earth; yet it  
is much seldomer found in the  
mineral state, properly so called.  
than any of the other Metals: for  
most Iron ores are scarce any



thing more than a ferruginous  
earth mixed in different proporti:  
ons with unmetallic earths and  
stones.

Iron is the commonest of  
all metals; nay, it is so univer:  
sally diffused through the earth,  
that it is difficult to find any  
stone, earth, or sand, that does  
not contain some of it; & there:  
fore none of these are usually con:  
sidered and treated as iron ores, ex:  
cept such as contain a great deal  
of that metal, & melt easily.

### §. 5. Of Tin

Tin is the lightest of all metals.  
Though it yields easily to the im:  
pression of hard bodies, it has but  
little ductility. Being bent back:

:wards & forwards it makes a small  
 cracking noise. It flows with a very  
 moderate degree of fire, & long before  
 it comes to be red-hot. If the calx of  
 Tin be urged by a strong fire it  
 grows white, but the greatest violence  
 of heat will not fuse it; w<sup>ch</sup> makes  
 some Chymists consider it as a cal-  
 :cinable earth or an absorbent one,  
 rather than a vitrifiable one. The  
 calx of Tin thus vitrified is called  
 Enamel. Enamels are made of  
 several colours by the addition of  
 this or that metalline calx.

Tin unites easily with all the  
 metals; but it destroys the ductility  
 & malleability of every one of them,  
 Lead excepted. Nay, it possesses  
 this property of making metals

brittle in such an eminent degree, that the very vapour of it, when in fusion, is capable of producing this effect. Moreover, which is very singular, the most ductile metals, even Gold & Silver, are those on w<sup>ch</sup> it works this change with the most ease & in the greatest degree.

Tin hath the property of giving a great lustre to all red colours in general; on which account it is used by the dyers for striking a beautiful scarlet. Water does not act upon this metal, as it does upon Iron and Copper; for which reason it is not subject to rust: nevertheless when it is exposed to the air, its surface soon loses its polish & splendour.



## Of its Ores.

Tin is never found in the earth pure and malleable, but always in a mineral state, & always mineralized by arsenic. Tin ores are not sulphurous; whence it comes that though tin be the lightest of all metals, its ores are never the less heavier than those of other metals, as arsenic greatly exceeds sulphur in gravity. Some tin ores contain also a little Iron. The ores of tin are to be washed, roasted, & smelted with a reducing flux, according to the general rules.

## S. 6. Of Lead.

Next to Gold & Mercury Lead is the heaviest of all metalline sub:

stances, but in hardness is exceeded by every one of them. Of all metals it melts the easiest, except Tin.

If Lead be boiled for a long time in a lixivium of fixed alkali, a part of it will be dissolved.

Sulphur renders this metal refractory & scarce fusible; & the mass they form when united together is friable.

### Of its Ores

Lead, like tin, is never found but in a mineral state. It is most commonly mineralized by sulphur; yet there are some lead ores which also contain arsenic.

Lead ores, as well as all others, must be roasted and smelted with a reducing flux.

# Of Quick Silver.

The reason why Quick Silver, by the Chymists commonly called Mercury, is not reputed a metal is, that it wants one of the essential properties thereof, to wit, malleability. When it is pure and undiluted with any mixture, it is always fluid, & of course unmaluable. But as on the other hand, it eminently possesses the opacity, the splendour, & above all the gravity of a metal, being next to Gold the heaviest of all bodies, it may be considered as a true metal. differing from the rest no other wise, than by being constantly in fusion.



If Mercury be exposed to the greatest heat that it can bear without sublimation, & continued in it for several months, or even a whole year together, it turns to a red powder, which the Chymists call *Mercurius precipitatus per se.*

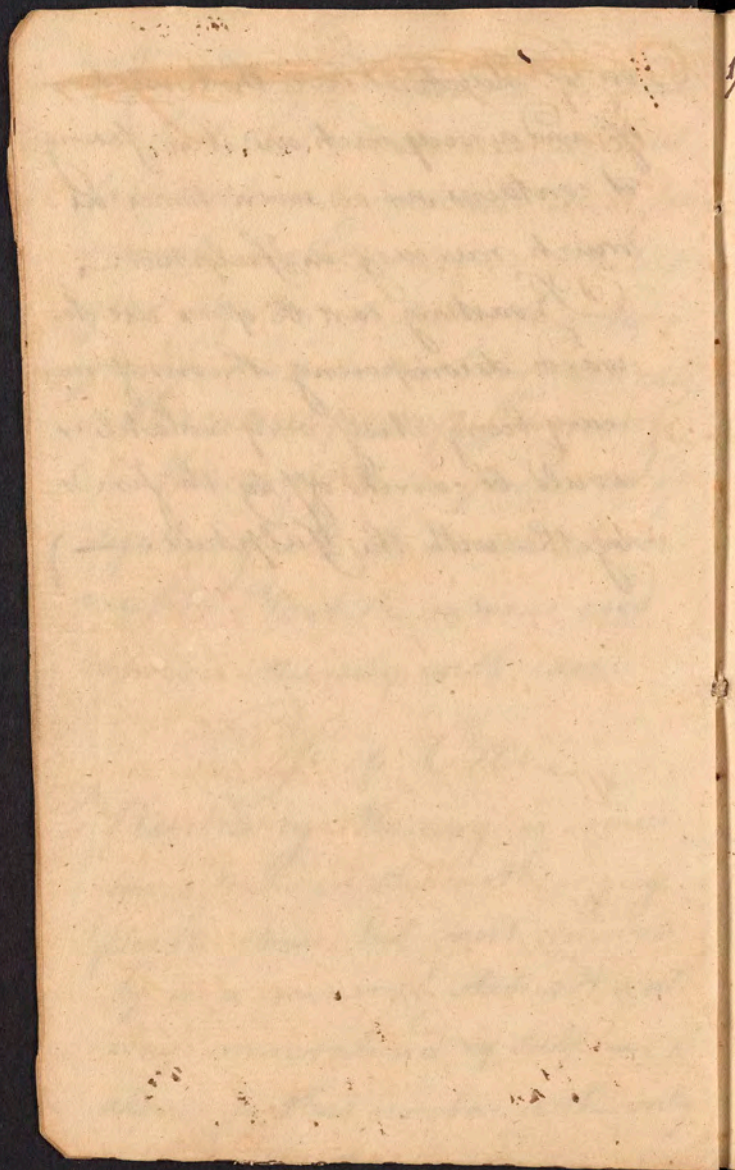
Mercury has the property of dissolving all the metals & Iron excepted. But the nitrous acid dissolves Mercury with ease.

### Of its Cres.

Running Mercury is sometimes found in the earth, or grey friable stones; but most commonly in a mineral state. It is always mineralized by Sulphur & alone so that cinabar is the only

ore of Quick-Silver, that we know  
of: and a very rich one it is, seeing  
it contains six or seven times as  
much mercury as Sulphur.

Roasting can be of no use to:  
wards decomposing the ore of mer-  
cury being itself very volatile &  
would be carried off by the fire &  
together with the Sulphur. —





~~Examination Public~~

## Examination Public

2. What's Anatomy &

- w<sup>t</sup> a Skeleton, how divided &
- w<sup>t</sup> is contain'd in the Skull.
- where does the Nerves Arise
- how many Bones in the Head.
- w<sup>t</sup> Bones constitute the Trunk.
- w<sup>t</sup> the shape of y<sup>e</sup> Spine.
- w<sup>t</sup> y<sup>e</sup> shape of y<sup>e</sup> Vertebrae
- w<sup>t</sup> is contain'd in the Thorax.
- how are the Lungs covered.
- w<sup>t</sup> sort of a Membran is y<sup>e</sup> Pleura & how many
- how is the Heart covered
- w<sup>t</sup> the Use of the Lungs - &
- does all the Blood in the Body go thro the Lungs.
- w<sup>t</sup> is the Name of these Vessels that go thro the Lungs

- W<sup>t</sup> The Use of y<sup>e</sup> Lactials & Nerves
- W<sup>t</sup> divides the 2 Cavities of y<sup>e</sup> Body
- W<sup>t</sup> y<sup>e</sup> Shape of the Diaphragm  
& its substance how is its  
shape changes
- W<sup>t</sup> communicat<sup>n</sup> is there bet  
the Thorax & Abdomen.
- how many perforations thro y<sup>e</sup>  
Diaphragm. 3 — Part
- how is the Abdomen divided
- why these distinctions
- why not in the Thorax
- Where is the Liver situated
- where y<sup>e</sup> Spleen & Stomach  
Kidney
- What the use of the Liver.
- W<sup>t</sup> is the Bile secreted from
- W<sup>t</sup> is the Vena Porta
- W<sup>t</sup> is the V Porta made of
- W<sup>t</sup> is the use of the Venal  
Blood being taken to y<sup>e</sup> Liver
- How is the Bile secreted <sup>into the</sup>
- W<sup>t</sup> is y<sup>e</sup> secretory Vessels

W<sup>th</sup> do the Arteries terminate  
in in the Liver

- W<sup>th</sup> do the Poi Bil. terminate in

- does the Bil. Regurgitate.

- how is the Bil. propelled into the  
Duodenum - Hall

- What is the Shape of y<sup>e</sup> Stomach.

How does the Alim<sup>nt</sup> Pass on  
Account of Valves there

How many Coates has it. 3

- Is the muscular coat of the  
Stomach strong enough to  
perform Digestion -

- how is it performed -

- where is the Alim<sup>nt</sup> pro:  
pelled to, from y<sup>e</sup> Stomach  
& how - w<sup>th</sup> y<sup>e</sup> Pylorus.

- What is the difference between  
the Duodenum & the rest

Why is the Gutty ty'd down.

Where does the Pancreatic  
Juice come from



Wt. 4. Use of the Bile -  
Where are the Lactals situated  
By wt. power do the these  
Lactals take up their fluid -  
- Where do they carry it to -  
- Where the Thoracic Duct.  
- Wt. it use - where does it  
carry its fluid  
- Does the Action of the Tho:  
racic Duct depend on the Heart  
- how is its fluid propelled -  
- What the Bile mixed with  
- how is the Blood carry'd to the  
different p<sup>ts</sup> of the Body.  
- Wt. is an Artery - &c -  
- Is there any peristaltic motion  
in the Arteries - yes  
Wt. do arteries terminate in  
Wt. the Use of Veins  
Wt. the difference between  
Arteries & Veins  
Have all Veins Valves -

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Why in the Veins of y. Extremitie  
Are there as many Veins as  
Arteries

W. are Lymphatics

how do you prove them Absorb<sup>t</sup>

W. is the Urine

Where secreted - Kidney

How is it carry'd from y. Kidney

Where do they carry it to, can

the Urine regenerate

W. the Contents of y. Pelvis

Nothing between Bladder &

Rectum -

How many p.<sup>s</sup> of Muscles on

the Abdomen -

How are the Viscera covered

W. is the Peritoneum -

Is it moist or dry -

W. is y.<sup>e</sup> particula in y.<sup>e</sup> great  
Gutt.

Whence arises the Gravel

by Mr. Peter

Is y.<sup>e</sup> stone ever generated in any  
other p.<sup>t</sup> of the Body than y. Bladder

Where does the Artery End & the  
Vein begin - how is it known -

Next Morgan -

W. is Chemistry - Armstrong

How are they distinguished

W. Analysis & Synthesis

W. are Bodies  
How many kinds of Elements.

W. is an Atom

W. Chemical Principles

W. are Mixt

W. a Compound w. diff.

W. a Decomp. & a re-decomp.

W. are simple Bodies

resolved - How are

Aggregates divided -

How const. & integrant p<sup>ts</sup>

Differ -

W. is Nitro & how divided

How is the Acid generated  
& how promoted -



How is the Alkali obtained  
by adding inflammably -

What is the Vit Acid, is it Native.

What is it combined with -

What is the composition of Sulphur

Is it ever found united with  
Earthy Substances.

What is the effect when applied  
to any other Acid. & Alkali.  
& Water. - I

How do you dissolve Iron in  
the Vitriolic Acid - diluted

What is the Phenomenon here.

What is Phlogiston -

What is the specific gravity of the Acid

What is the Names is it distin:  
guished in the Books of Chem.

And they all diff. Acids.

How does not the Acid of Sulphur  
differ from the Acid of Vitriol.

From what substance is the Acid  
of Vitriol chiefly obtained -  
Sulphur

How many Clases of Bodies  
are in Chemistry.

W<sup>t</sup> is a saline Body.

How many kinds of Salts are  
there — how many simple

Why called simple.

How many kinds of Acid. — 4

Why are they called by their

Names — from the substance <sup>attained</sup> from them  
How many kinds of comp. Salts

W<sup>t</sup> are the Marks of an Acid.

W<sup>t</sup> that of an Alkali.

Is there any other Mark of  
an Alkali than that of

turning Sy. of Viol. Green

W<sup>t</sup> the effects of uniting  
an Acid & Alkali together

— can they be united unequally

Principles

How many kinds of Comp. Salts

W<sup>t</sup> are Metallic Salts

Where is there an Instance of this <sup>Salts</sup>

W<sup>t</sup> are Earthy Salts -

W<sup>t</sup> are Purging Salts - Earthy

W<sup>t</sup> is the Effect of an Acid united  
with an Earth - w<sup>t</sup> Effervesces

W<sup>t</sup> the eff. of acids on Alkali  
to an Earthy Salt.

How many kinds of Alkali

W<sup>t</sup> is a fixt Alkali

W<sup>t</sup> a Volatile Alkali

Do these differ from one Another

Do the Vol. Alkali when united  
with Alkali form the same  
kind of Salt as the fixt -

How many kind of Acids

How many neutral Salts -

W<sup>t</sup> Vol. Tartar



W. Glauber Salt

W. y. difference of cubic Decomposition  
Nitric

how is Nitric obtained

how many kinds of salt does the  
Muriatic Acid afford

W. is Digestive Salt

W. common salt

W. is Mendereri

W. salt is Glauber salt obtained from

W. is Inflamm<sup>e</sup> Substance

W. y. distinction between an  
Inflamm<sup>e</sup> & Ignited Body

How many kinds of Inflamm<sup>e</sup>  
ble Bodies are there

How many kinds of Oil,  
what kinds are there

- Why called by these Names  
 - How many kinds of Vegetable Oils.  
 - What is Express'd, Essential, & Empy.  
 In w<sup>t</sup>. Quality does an Express'd  
 Oil differ from Essential Oils -  
 w<sup>t</sup>. y<sup>e</sup>. Quality of Empyrumatick Oil.  
 Wines -

How many kinds of Earthy Bodies  
 w<sup>t</sup>. an Absorbent Earth

w<sup>t</sup>. a Crystalline E<sup>r</sup>.

w<sup>t</sup>. is an Oscillacious Body.

w<sup>t</sup>. kind of Earth is a calcareous  
 gives an Example of Limestone

w<sup>t</sup>. is the particular Qual<sup>y</sup>.

W<sup>t</sup>. is fix'd Air - is there any

surrounding us in y<sup>e</sup>. Atmosphere

w<sup>t</sup>. the Use of Use of Crystalline  
 Earth. ~~to make~~ Glass.

Is the Action of y<sup>e</sup>. Fire alone suffi-  
 cient to convert it into Glass  
 or y<sup>e</sup>. Limestone

1<sup>st</sup> The Changes in the Qualities  
of Bodies depend upon

W<sup>t</sup> is necessary

2<sup>nd</sup> W<sup>t</sup> is Attraction - Election &  
give an Instance -

How is Election Attraction -  
in Single & Double

W<sup>t</sup> is Single & Double Election  
How many L<sup>s</sup> of Distillation -

Thus far by Magan  
his Porter Questions & Answers -

concerning Acid & Alkali, &  
the first Motion of Bodies  
Here Kuhn begins

3<sup>rd</sup> W<sup>t</sup> is y<sup>e</sup> Definition of M.M.

How is Astring<sup>t</sup> known  
Whither does it act on the  
simple or moving Solid

How is Astringents divided -  
Whether is Vegetable Astring<sup>t</sup> divided  
as well as Fossils & Mineral



How do Calcareous Astringents act  
on the Body

W. Calcareous substances are used  
as Astringents.

Will any of these substances act  
in their Native state as Astringents.

How are Chalybeate Waters known.

Is water ever impregnated with  
Copper - how known

Is there any difference in the  
effects of Copper & Irons

Is Lead a safe Medicine - no

W. part of the Body does  
Emollients act on

Which are the principle ones  
Do they differ in their effects

Is cold Water an Emollient.

What y. Advantage of using  
warm Water -

How is Glycerine

W<sup>t</sup> parts do Stimulant. act  
When Indicated

Pinna

W<sup>t</sup> the Effects of Stimulant -  
Is there any disadvantage in  
a long use of Stimulant,

W<sup>t</sup> is P. Bark. is it indicated  
in every Fever - no

What Fever is it ordered in  
Which is the best Method of  
giving the Bark - in powder  
Wade

What are Sedatives -

On w<sup>t</sup> pts do they act -

at a reg<sup>r</sup> principle what are  
the effects of Opium -

Is Opium useful in all pains no.  
Is it useful in all spasmodic comp<sup>s</sup>.  
Is it of service in Hemorrhages <sup>in them</sup> yes

Pratt

W<sup>t</sup> are the effects of C. Bath. & Hyg<sup>t</sup>.  
In reg<sup>r</sup> Diseases cases w<sup>t</sup> proper  
W<sup>t</sup> the effects of it - Dr

Why is the Cold felt so sensibly 59  
as well as the heat

Is the Cold B: usefull in Consump-  
tion, & other weakneses - no -

How is the Epilepsy cured

Is good Hypocritic eyes - in Hypocriton

Winder

What are Emetics w<sup>th</sup> their Effect.

Is there any difference in Emet.

What is a Scatagoga -

Which is the strongest one &  
will it have any effect on the  
Body in y<sup>e</sup> crude state -

What the best form for Exhibition  
is a Salivat: always necessary  
for curing the Lues Venerea

Will it have its proper effect  
without Salivation -

Then which is the best method  
of giving -

What y<sup>e</sup> advantage of giving  
the milder preparations of it



Hall

What are y<sup>e</sup> Effect of Blister -  
- are they stimulat<sup>g</sup>?  
- why used in Topical Inflamm<sup>n</sup>?

What are effect of Cantharides  
when taken internally  
Purges it!

which are the milder  
what are y<sup>e</sup> Astringent purges  
what. is the dose of Aloe  
How is y<sup>e</sup> purgative virtue  
of Rhubarb. increased. by Calomel  
then for Phlegm

